

What I claim is:

1        1.        In an IEEE 802.11(b) wireless LAN, a method for accessing and analyzing the  
2                contents of data packets or frames transmitted along a IEEE 802.11(b) wireless  
3                communication channel, comprising the steps of:

4                        establishing a direct wireless logical connection with the wireless  
5                        communications network;

6                        receiving wirelessly, in real-time, data packets or frames transmitted in  
7                        the wireless communications network for all stations or devices associated  
8                        therewith;

9                        performing over a first period of time a detailed protocol analysis on  
10                        the contents of the header of the data packets or frames, including analyzing  
11                        associated protocol layers in detail; and

12                        displaying in real time the results of the analysis to a user.

1        2.        The method of Claim 1, further including the steps of:

2                        storing in a memory storage device, the data packets or frames  
3                        captured over a second period of time; and

4                        performing an offline detailed analysis on the contents of the IEEE  
5                        802.11(b) header of the data packets or frames, and associated protocol layers,  
6                        stored in the memory storage device; and

7                        displaying the results to the user.

1        3.        The method of Claim 1, further including the step of:

2                        selectively turning said detailed protocol analysis on or off for a  
3                        particular protocol layer, whereby for a protocol layer turned off, that layer and  
4                        all protocol layers above or higher than that layer are not subjected to a

5 detailed protocol analysis.

1 4. The method of Claim 1, wherein the step of performing a detailed protocol  
2 analysis includes the step of generating alarms for display relating to detected  
3 network and protocol errors.

1 5. The method of Claim 4, wherein the step of performing a detailed protocol  
2 analysis further includes selectively turning on or off said alarm generating  
3 step.

1 6. The method of Claim 4, wherein the step of performing a detailed protocol  
2 analysis further includes the steps of:

3 assigning a default severity level from a plurality of available severity  
4 levels for each available alarm; and

5 selectively determining whether a particular alarm type is to be logged  
6 when generated.

1 7. The method of Claim 6, further including the step of selectively marking an  
2 alarm as a diagnosis or a symptom dependent upon the detected severity level.

1 8. The method of Claim 1, wherein said step of displaying includes the step of  
2 showing all layers of protocols analyzed for each capture of frame or data  
3 packets.

1 9. The method of Claim 8, wherein said step of displaying further includes the  
2 step of:

3 showing the total number of frames and octets analyzed for a selected  
4 protocol layer.

10. The method of Claim 8, wherein said step of displaying includes the step of  
showing for a selected protocol layer, lower layer objects linked to a current  
selected object.

- 1 11. The method of Claim 8, wherein said step of displaying includes the step of  
2 showing the hosts created for said IEEE 802.11(b) wireless communication  
3 layer, and the attributes of said hosts, respectively.
- 1 12. The method of Claim 11, further including showing detailed statistics for each  
2 selected host.
- 1 13. The method of Claim 11, further including showing attributes for each selected  
2 host, including MAC address, station function, frame types, channel, network  
3 types, BSSID, and SSID.
- 1 14. The method of Claim 11, further including showing the higher layer DLC  
2 objects linked to selected wireless layer hosts, respectively.
- 1 15. The method of Claim 11, further including showing alarms associated with a  
2 selected host.
- 1 16. The method of Claim 1, wherein said step of detailed protocol analysis  
2 includes the steps of:
- 3       permitting a user to enter the MAC addresses of known access points  
4       operating in said IEEE 802.11(b) wireless communication channel;
- 5       selectively activating a rogue access point detection routine;
- 6       checking the addresses of newly detected access points against the  
7       addresses of said known access points; and
- 8       marking for display as a rogue access point, any access point detected  
9       that is not included as a known access point.
- 1 17. A wireless network troubleshooting tool for monitoring an IEEE 802.11(b)  
2 LAN wireless communication network to detect and diagnose failures in said  
wireless communication network, said tool comprising:

4 a wireless network interface device operable in a promiscuous mode  
5 within a wireless communications network for capturing a plurality of  
6 frames or data packets transmitted through the network for all stations or  
7 devices associated therewith;

8 a user interface system including input and output devices for enabling  
9 a user to input and obtain information associated with said plurality of  
10 captured frames;

11 a memory storage device for storing said plurality of captured frames  
12 as received from said wireless network interface device; and

13 a programmable processor unit connected to said wireless network  
14 interface device, said user interface system, and said memory storage device,  
15 said processor being programmed to execute a routine comprising the steps of:

16 establishing a direct wireless logical connection with said  
17 wireless communications network via the network interface device;

8 receiving wirelessly, in real-time, frames transmitted in the  
9 wireless communications network via direct wireless logical connection;

0 receiving from said user, via said user interface ,configuration  
1 parameters;

2 performing, through use of said configuration parameters a  
3 detailed protocol analysis on the contents of respective headers of the  
4 captured data packets or frames, including associated protocol layers,  
; respectively; and

displaying the results of the analysis to the user in real-time.